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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/673,687	12/22/2000	Uwe Knauss	MR-14PCT	2035

7590 09/20/2002  
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EXAMINER

CUEVAS, PEDRO J

ART UNIT PAPER NUMBER

2834

DATE MAILED: 09/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/673,687

Applicant(s)

KNAUSS, UWE

Examiner

Pedro J. Cuevas

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 10 May 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Response to Arguments***

1. Applicant's arguments with respect to claims 1-5 have been considered but are moot in view of the new ground(s) of rejection.

***Drawings***

2. The corrected or substitute drawings were received on May 10, 2002. These drawings are acceptable.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claims 1 recite the following limitations:

“the secondary circuit” in line 6; and

“upper or lower supply voltage”.

There is insufficient antecedent basis for this limitation in the claim.

6. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are:

a description of the physical interconnection, not function, of the circuit components;

physical connection of final circuit stage with the secondary stage and other components;

physical connection of the claim 1 embodiment with the final stage.

These physical relationships must be made clear in order to properly consider and apply the claimed structure to the prior art.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,947,074 to Suzuki in view of U.S. Patent No. 4,973,876 to Roberts, and further in view of U.S. Patent No. 5,017,010 to Mamin et al.

Suzuki discloses the construction of a circuit arrangement for the dynamic control of piezotranslators (2) with energy recovery by means of a single inductive intermediate store (53) which is arranged in series with the piezotranslators (2) as well as by clocked switches, wherein for achieving a predetermined linear voltage characteristic at the piezotranslator (2), the secondary circuit is designed as a half-bridge consisting of the switches (6a, 7a) at whose output the inductive intermediate store (53) is arranged in series with the piezotranslator (2), with the switches (6a, 7a) being externally controlled and operated at a high cycle or switching frequency in such a manner that the intermediate store is alternately connected with an upper or lower

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supply voltage (1) at the most, with the series connection of piezotranslator (2) and inductive intermediate store (53) carrying a superimposed bridge direct current.

However, it fails to disclose:

a circuit arrangement wherein the switches (3, 4) are formed as MOS transistors (9), with an external diode (10) being connected in series with the clearance between contacts, and this series connection being bridged by a commutating diode (11) which is oppositely poled to the diode (10) as stated in Claim 2; and

a circuit arrangement wherein:

a current sensor (12) for generating a control voltage which is proportional to the output current of the final stage (18) is arranged in the secondary circuit of the piezotranslator (2) for controlling the arrangement,

with the control voltage being connected with a first input of a first controller (13),

the second input of the first controller (13) being applied at the output of the second controller (14),

at whose two inputs a predetermined reference variable according to the physical position of the piezotranslator (2) and an actual value which is proportional to the output voltage of the final stage (18) are applied as stated in Claim 3.

Roberts teaches a circuit arrangement wherein:

the switches (6a, 7a) are formed as MOS transistors (114), with an external diode (116) being connected in series with the clearance between contacts, and this series connection being bridged by a commutating diode (118) which is oppositely poled to the

diode (116) for the purpose of preventing the body diode in the device (114) from conducting current in the reverse direction; and

a current sensor (700) for generating a control voltage signal which is proportional to the output current of the final stage (200) is arranged in the secondary circuit of the piezotranslator (18) for controlling the arrangement, with the control voltage being connected with a first input of a first controller (400), the second input of the first controller (400) being applied at the output of the second controller (20), at whose two inputs a predetermined reference variable according to the physical position of the piezotranslator (18) and an actual value which is proportional to the output voltage of the final stage (200) are applied for the purpose of controlling the switching devices of the converter unit (100).

Mamin et al. teaches the construction of a highly sensitive optical directional apparatus for the purpose of sensing the position of a movable member.

It would have been obvious to one skilled in the art at the time the invention was made to use the circuit arrangement disclosed by Roberts on the circuit arrangement disclosed by Suzuki for the purpose of:

preventing the body diode in the device (114) from conducting current in the reverse direction; and

controlling the switching devices of the converter unit (100).

It would have also been obvious to one skilled in the art at the time the invention was made to use the highly sensitive optical directional apparatus disclosed by Mamin et al. on the

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circuit arrangement disclosed by Suzuki in view Roberts in the Applicants claimed configuration for the purpose of sensing the position of a movable member.

***Conclusion***


9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pedro J. Cuevas whose telephone number is (703) 308-4904. The examiner can normally be reached on M-F from 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Néstor R. Ramírez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-1341 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Pedro J. Cuevas  
September 18, 2002

  
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